PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	SCHNATTERER, et al.	Examiner: Unassigned
Serial No.:	Unassigned (based on PCT/EP00/06997)	Group Art Unit: Unassigned
Filed:	Herewith	Docket: 442-136 PCT/US
For:	VACUUM PRODUCING DEVICE	Dated: March 6, 2002

EXPRESS MAIL CERTIFICATE

Date: ***March 6, 2002*** *Label No.* ***EL922101323 US***
I hereby certify that on the date indicated above, I deposited paper or fee with the U.S. Postal Service and that it was addressed for delivery to the Commissioner for Patents, Washington, D.C. 20231 by "EXPRESS MAIL Post Office to Addressee" Service.

CARLA BRYAN — *Name (Print)*

Carla Bryan — *Signature*

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Preliminary to examining the above-identified application, please amend said application as follows:

IN THE ABSTRACT OF THE DISCLOSURE :

Please replace the present Abstract with the following:

A vacuum producing device (1) possessing a principal suction nozzle unit (2) with a shut off valve (27) on the upstream side thereof and an additional suction nozzle unit (3) connected in parallel to the principal suction nozzle unit (2). While the supply of

pressure medium for the principal suction nozzle unit (2) is controlled in a manner dependent on the negative pressure produced by controlling the shut off valve (27), the additional suction nozzle unit (3) remains (3) constantly in operation. This means that a complete build up of vacuum may be ensured in conjunction with a complete switching off of the principal suction nozzle unit (2) together with a resulting air economizing effect.

IN THE CLAIMS:

Please amend the claims as follows:

1. A vacuum producing device comprising a principal suction nozzle unit able to be supplied by way of principal inflow duct with a pressure medium subject to a predetermined operating pressure, said pressure medium causing a suction effect, on flowing through the principal suction nozzle unit, in a principal suction duct adjoining a principal suction opening, said principal suction duct being connected or being able to be connected with a space to be evacuated, a shut-off valve being provided on the principal supply duct, said valve being able to be actuated in accordance with the negative pressure obtaining instantaneously in the space to be evacuated, said valve being adapted to cause an interruption of the pressure medium supply for the principal suction nozzle unit on a predetermined target negative pressure being reached, characterized by an additional suction nozzle unit, connected in parallel functionally with the principal

suction nozzle unit, such additional unit being constantly supplied during operation of the device with pressure medium subject to an operating pressure and such additional unit possessing an additional suction opening connected fluidwise with the principal suction duct of the principal suction nozzle unit, a check valve being provided between the two suction openings on the principal suction duct and being adapted to close oppositely to the direction of suction able to be caused by the principal suction nozzle unit.

2. The vacuum producing device as set forth in claim 1, characterized in that the additional suction nozzle unit is designed for a maximum pressure medium flow rate less than that of the principal suction nozzle unit, of the supplied pressure medium.

3. The vacuum producing device as set forth in claim 1, characterized in that the additional suction nozzle unit is so designed that the suction flow rate able to be produced by it is of the same order as the leak rate in the case of the space to be evacuated.

4. The vacuum producing device as set forth in claim 1, characterized in that the shut off valve is in the form of a 2/2 way valve.

5. The vacuum producing device as set forth in claim 1, characterized in that for operation of the shut off valve the negative pressure obtaining in the space to be evacuated is switched constantly to an actuating area constantly functionally connected with the valve member of the shut off valve, oppositely acting actuating means being provided, which as regards the valve member cause an oppositely acting force (F_G) in a direction opposite to the actuating force F_B caused by switched negative pressure.

6. The vacuum producing device as set forth in claim 5, characterized in that the oppositely acting actuating means include a spring means causing the oppositely acting actuating force F_G, such spring means preferably being adjustable.

7. The vacuum providing device as set forth in claim 5, characterized in that the oppositely actuating means include an oppositely acting actuating area functionally connected with the valve member of the shut off valve, such area constantly having the operating pressure switched to it, which is present at the principal inflow duct.

8. The vacuum producing device as set forth in claim 7, characterized in that the ration between the actuating area and the oppositely acting actuating area is so selected that the vacuum able to be produced inside the space to be evacuated is proportional to the operating pressure applied at the principal inflow duct.

9. The vacuum producing device as set forth in claim 5, characterized in that the actuating area is constituted by a moving wall section of the principal inflow duct and preferably is provided on an end face of the valve member.

10. The vacuum producing device as set forth claim 1, characterized in that all suction nozzle units are supplied in operation of the device with a pressure medium subject to the same pressure.

11. The vacuum producing device as set forth in claim 1, characterized in that several parallel connected principal suction nozzle units are provided.

12. The vacuum producing device as set forth in claim 1, characterized by a shut off valve having a steady setting behavior.

REMARKS

Applicant respectfully requests entry of this Preliminary Amendment prior to examination on the merits of the Application filed herewith. This Amendment rewrites the claims to eliminate multiple dependencies and the use of reference characters in the claims.

In accordance with 37 C.F.R. §1.121, attached hereto is a "Marked-up Copy of Amended Specification" showing the changes.

Accordingly, this case is believed to be in all respects in condition for examination on the merits, and such examination and favorable consideration are respectfully and earnestly solicited.

Respectfully submitted,

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MARKED-UP COPY OF AMENDED SPECIFICATION

IN THE ABSTRACT OF THE DISCLOSURE :

Please amend the Abstract of the Disclosure as follows:

A vacuum producing device (1) possessing a principal suction nozzle unit (2) with a shut off valve (27) on the upstream side thereof and an additional suction nozzle unit (3) connected in parallel to the principal suction nozzle unit (2). While the supply of pressure medium for the principal suction nozzle unit (2) is controlled in a manner dependent on the negative pressure produced by controlling the shut off valve (27), the additional suction nozzle unit (3) remains (3) constantly in operation. This means that a complete build up of vacuum may be ensured in conjunction with a complete switching off of the principal suction nozzle unit (2) together with a resulting air economizing effect.

[Figure 1]

IN THE SPECIFICATION:

At page 1, please amend the Title of the invention as follows:

[A] VACUUM PRODUCING DEVICE

IN THE CLAIMS:

Please amend the claims as follows:

1. A vacuum producing device comprising a principal suction nozzle unit [(2)] able to be supplied by way of principal inflow duct [(16)] with a pressure medium subject to a predetermined operating pressure, said pressure medium causing a suction effect, on flowing through the principal suction nozzle unit [(2)], in a principal suction duct [(22)] adjoining a principal suction opening [(7)], said principal suction duct being connected or being able to be connected with a space [(24)] to be evacuated, a shut-off valve [(27)] being provided on the principal supply duct [(16)], said valve being able to be actuated in accordance with the negative pressure obtaining instantaneously in the space [(24)] to be evacuated, said valve being adapted to cause an interruption of the pressure medium supply for the principal suction nozzle unit [(2)] on a predetermined target negative pressure being reached, characterized by an additional suction nozzle unit [(3)], connected in parallel functionally with the principal suction nozzle unit [(2)], such additional unit being constantly supplied during operation of the device with pressure medium subject to an operating pressure and such additional unit possessing an additional suction opening [(8)] connected fluidwise with the principal suction duct [(22)] of the principal suction nozzle unit [(2)], a check valve [(39)] being provided

between the two suction openings [(7 and 8)] on the principal suction duct [(22)] and being adapted to close oppositely to the direction [(38)] of suction able to be caused by the principal suction nozzle unit [(2)].

2. The vacuum producing device as set forth in claim 1, characterized in that the additional suction nozzle unit [(3)] is designed for a maximum pressure medium flow rate less than that of the principal suction nozzle unit [(2)], of the supplied pressure medium.

3. The vacuum producing device as set forth in claim 1 [or in claim 2], characterized in that the additional suction nozzle unit [(3)] is so designed that the suction flow rate able to be produced by it is of the same order as the leak rate in the case of the space [(24)] to be evacuated.

4. The vacuum producing device as set forth in claim 1 [any one of the claims 1 through 3], characterized in that the shut off valve [(27] is in the form of a 2/2 way valve.

5. The vacuum producing device as set forth in claim 1 [any one of the claims 1 through 4], characterized in that for operation of the shut off valve [(27)] the negative pressure obtaining in the space [(24)] to be evacuated is switched constantly to

an actuating area [(32)] constantly functionally connected with the valve member [(36)] of the shut off valve [(27)], oppositely acting actuating means [(34)] being provided, which as regards the valve member [(36)] cause an oppositely acting force (F_G) in a direction opposite to the actuating force F_B caused by switched negative pressure.

6. The vacuum producing device as set forth in claim 5, characterized in that the oppositely acting actuating means include a spring means [(37)] causing the oppositely acting actuating force F_G, such spring means preferably being adjustable.

7. The vacuum providing device as set forth in claim 5, characterized in that the oppositely actuating means [(34)] include an oppositely acting actuating area [(35)] functionally connected with the valve member [(36)] of the shut off valve [(27)], such area constantly having the operating pressure switched to it, which is present at the principal inflow duct [(16)].

8. The vacuum producing device as set forth in claim 7, characterized in that the ration between the actuating area [(32)] and the oppositely acting actuating area [(35)] is so selected that the vacuum able to be produced inside the space [(24)] to be evacuated is proportional to the operating pressure applied at the principal inflow duct [(16)].

9. The vacuum producing device as set forth in claim 5 [any one of the claims 5 through 8], characterized in that the actuating area [(32)] is constituted by a moving wall section of the principal inflow duct [(16)] and preferably is provided on an end face of the valve member [(36)].

10. The vacuum producing device as set forth claim 1 [any one of the claims 1 through 9], characterized in that all suction nozzle units [(2 and 3)] are supplied in operation of the device with a pressure medium subject to the same pressure.

11. The vacuum producing device as set forth in claim 1 [any one of claims 1 through 10], characterized in that several parallel connected principal suction nozzle units [(2 and 48)] are provided.

12. The vacuum producing device as set forth in claim 1 [any one of claims 1 through 11], characterized by a shut off valve [(27)] having a steady setting behavior.